

COMPETITION: AN INTEGRAL PART OF THE ACQUISITION PROCESS

Lt Col Roger C. Head, HQ Air Force Systems Command

ABSTRACT

The concept of competition for defense acquisition is one that requires careful examination and discussion in today's cost conscious environment. The Office of Management and Budget Circular A-109 directs each government agency to ". . . depend on, whenever economically beneficial, competition between similar or differing system concepts throughout the acquisition process." This direction leads to the current high level attention that competition is receiving today. Competition is being examined as a major factor in cost control for weapon system procurement for the entire acquisition process. The need for complete preplanning and market research to promote effective competition is apparent when past procurement efforts are examined. Preplanning and market research in the early stages of the acquisition process are areas that need active management support.

INTRODUCTION

In a recent letter from General Robert T. Marsh to his field commanders in Air Force Systems Command, he addressed the subject of "Competition Management."¹ His letter outlined his competition policies as a major factor in controlling weapon system costs. Three particular policies are noteworthy:

- Emphasis will be given to maintaining competition in production through increased use of second sourcing, component breakout and competition of alternate systems.
- Effective subcontract competition will be emphasized with major prime contractors. Ways will be developed to reward contractors having effective competition management programs.
- Programs will be established at field activity level to:
 - Better educate everyone involved in the acquisition process regarding the benefits of effective competition.
 - Recognize competition lessons learned and significant achievements.

The importance of competition to the acquisition process is emphasized by General Marsh's letter and the policies that he has presented. What is significant about the three particular policy items is their underlying effect on the

acquisition process. The intent is obvious: to give the field commanders some specific direction to encourage and promote more competition.

The purpose of this article is to review the types of competition available in defense acquisition and the current push behind the high level attention to increase competition, particularly during production. In addition, closely tied to the General Marsh's policies is a requirement for more early planning and market research to promote a truly competitive environment. This kind of activity, planning and market research, needs added attention to understand and promote competition in the defense marketplace.

TYPES OF COMPETITION

Competition is certainly nothing new to defense procurement. It has been around since the days of competitive prototyping and multiple-source production in World War II. Many differing approaches to competition have evolved over the years. Current statutory proposals described by Emanuel Kintisch point out three distinct types of competition: price, lowest total cost, and multiple factors.² Price competition is based upon the lowest price to the government and is used when the market analysis shows equal or similar products will satisfy the need. Evaluation will be made on price only or price related factors, and firm fixed-price contracts will be used. Contract awards will be made without discussion, similar to formal advertising procedures.

The second type of competition Mr. Kintisch describes is the lowest total cost. This type is based on the total cost to the government including not only price, but considerations for maintenance and operating costs over the useful life of the item or service. Lowest total cost competition is used when dissimilar characteristics of products or services are expected to affect cost of ownership. Factors include product performance, operating and maintenance costs, energy consumption, product life, reliability and safety. The ultimate criterion used is the lowest total cost since the requirement is reasonably firm and the cost of ownership can be quantified. A firm fixed-price contract can be used if no discussion is required to settle the evaluation criteria.

Finally, the multiple factors competition is based on price, cost and other factors such as design, performance capability, service, delivery, and technical and management capability. It is the most complex type in which

government needs cannot be precisely described, a well-defined solution does not exist, evaluation factors cannot be objectively measured, and technical and management performance is critical. This type of competition applies to the majority of major weapon acquisitions and research and development efforts.

An additional type of competition that Mr. Kintisch describes is "follow-on-to-competition." This type of competition refers to production competition described in a contract proposal once a competitive development contract has run its course. Leader/follower and other forms of second sourcing may fall in this category.

Another viewpoint of types of contracts is presented in Figure 1 where design and price are the major criteria. The various stages of the acquisition process are shown with the corresponding type of competitive activity. This depiction gives a broader view for the potential areas of defense competition, specifically out in the production and reprocurement stages.

COMPETITION INITIATIVE

Increased interest in the use of competition in the acquisition process has been spearheaded by former Deputy Secretary of Defense Frank C. Carlucci. From his July 1981 memorandum, he stated: "We believe that it (competition) reduces the cost of needed supplies and services, improves contractor performance, helps to combat rising costs, increases the industrial base, and ensures fairness of opportunity for award of government contracts."³ From General Marsh's letter, we can see the downstream effect. Prior to Mr. Carlucci's efforts, the 1972

report of the Commission on Government Procurement made a number of recommendations on competition. They were eventually incorporated in the Office of Management and Budget Circular A-109. The significance of this document was that it directed attention to using competition throughout the acquisition process "... depend on, whenever economically beneficial, competition between similar or differing system concepts throughout the acquisition process."⁴ This direction is significant to defense procurement which historically has concentrated upon competition in the development phase and a winner-take-all situation in the production phase. Defense costs have shown drastic increases over the past twenty years due to programs, once won competitively by a contractor, that have shown tremendous cost growth during production. Excellent examples are the Air Force's C-5 Galaxy, the Army's M-1 tank, and the Navy's F-18 Hornet.

Competition in the production stage may not be feasible nor desirable for all major weapon systems involving multiple contractors; however, it does offer potential cost savings and should be examined on a case-by-case basis. Figure 2 presents some cost savings figures for the production stage.

A preplanned leader/follower competitive strategy or other methods of second sourcing are examples that have been used in production competition. In the Advanced Medium Range Air-to-Air Missile (AMRAAM) program, a leader/follower approach has been used from the initial planning stages as a competitive production strategy. Preplanning is the key to the potential success of production competition. The same type of strategy is being considered for the Low Altitude Navigation and Targeting Infrared for Night (LANTIRN) program, but without too much current success. The up front

FIGURE 1
Types of Competition

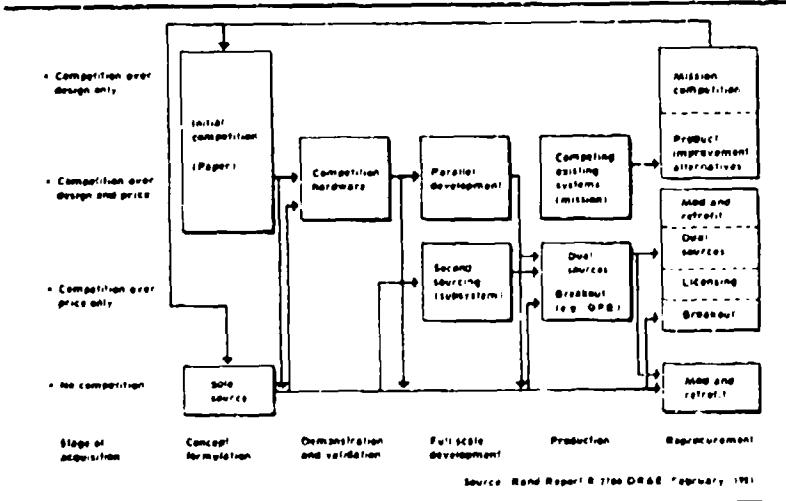


FIGURE 2 PRODUCTION COST SAVINGS FROM COMPETING PREVIOUSLY SOLE SOURCE CONTRACTS*

Program	(%)	Program	(%)
AN/APN-123	67.7	USM-181 Telephone Test Set	36.3
MK-980/PPS-3	66.3	Standard Missile, ER RIM 67A	34.0
AN/ARC-54	63.1	AN/SGS 23 208A Transducer	32.3
MK-48 Torpedo - Test Set	61.8	Tow Launcher	30.2
MK-48 Torpedo - Exploder	61.2	TD-660 Multiplexer	28.4
AN/GRC-103	60.1	BULLPUP 12B Missile	26.5
Standard Missile, MR RIM 66A	59.2	APX72 Airborne Transponder	23.3
AN/ARA-63 Radio Receiver	57.9	FAAR TADDS	18.2
TD-352 Multiplexer	55.6	FAAR Radar	16.6
AN/PRC-25	55.0	Dragon Tracker	12.3
60-6402 Electric Control	52.7	TOW Missile	12.3
MU-522 Modulator- Demodulator	51.9	UPM-98 Test Set	11.5
Hawk Motor Metal Parts	49.9	AN/ASN-43	10.7
MK-48 Torpedo - Warhead	48.6	SPA-25 Radar Indicator	10.7
MK-48 Torpedo - Electric Assembly	47.0	SHILLELAGH	4.1
CV-1548 Signal Converter	45.4	Dragon Round	2.8
AN/FYC-82	43.2	Sidewinder AIM-9D/C	1.5
TD-204 Cable Combiner	42.0	PP-4763/GRC Power Assembly	1.5
AN/PRC-77 Radio	41.9	SPA-66 Radar Indicator	-3.4
AN/GRC-106	41.8	Rockey Bomb	-4.5
TD-203 Radio Combiner	40.2	Sidewinder AIM-9B	-5.6
FGC-20 Teletype Set	39.9	AM/ARC-131 Radio	-10.1
TALOS Missile	39.8		

* AVERAGE PRODUCTION COST SAVINGS FOR 45 PROGRAMS 33%

costs of initiating this type of "follow-on-to-competition" efforts were not preplanned for in LANTIRN's case. The additional funding at this stage of the program makes a leader/follower strategy for production competition less than desirable.

The use of more competition among subcontractors is an area where added defense attention is being placed. Depending upon quantities being procured and production rates, subcontractors offer a potential for increased production competition. In a recent speech by Secretary of Defense Weinberger, he squarely pointed out that "there is ample evidence that spare parts prices are excessive and that there is far too little competition in the buying of spares."⁶ This area of procurement and its cost control deserve serious attention.

The potential for competition in the production phase of acquisition is shown by Air Force data. Defense acquisition regulations define five categories of competition:⁷

- Price competition
- Design, technical, or other competition
- Follow-on actions after price competition
- Follow-on actions after technical or other competition
- Other non-competitive actions

The first two are basically "pure" competition,

whereas the "follow-on actions" are principally non-competitive and the final category is basically sole source. Figure 3 shows several important trends. First, there has been a definite reduction in sole source awards from FY 80 to FY 82. Secondly, there is an increasing amount of follow-on action, non-competitive contract awards. This trend is due to several large reprocurement efforts within the Air Force, i.e., B-1B, MX, F-16, C-5B. The reduction in sole source contracts shows the Air Force's emphasis over the past few years on competition. However, the second trend emphasizes a large potential for further competition.

FIGURE 3
AFSC Obligated Dollars

	FY 80	FY 81	FY 82
Competitive (\$B)	36.1 1.41	42.6 2.404	34.8 2.634
Follow-On (\$B)	38.1 1.529	45.1 2.549	52.7 4.441
Sole Source (\$B)	25.1 .938	12.3 .694	6.6 .486

In a current article by Commander Ben Sellers, USN, he astutely recognizes that effective production competition requires early planning and effective use of second sourcing methods.⁸

"These and other problems have been raised, suggesting that effective production competition may not be feasible or desirable. In my opinion, however, in the vast majority of cases, the problems can be either eliminated or minimized by proper advance planning, early and forthright communication with the contractors, and effective implementation of an appropriate second-sourcing method."

The five methods of second sourcing that Sellers describes are form-fit-function, technical data package, directed licensing, leader/follower, and contractor teams. These methods leave the government a flexible approach to finding a strategy for production competition.

PREPLANNING/MARKET RESEARCH

There is a definite need for a complete analysis prior to every defense procurement focusing on the competitive environment that exists in the marketplace. If the particular type of marketplace can be accurately identified, then the proper strategy for procurement can be applied. The types of marketplace that come to mind are: (1) pure competition, (2) monopoly, and (3) monopsony (one buyer-many sellers). If the marketplace is properly identified in the preplanning stage of the procurement process, competition can be used effectively. Sole source procurement, in certain cases, may be justified with proper research. Colonel C. Dana Brabson, USAF, makes a good case for this point. "The indiscriminate enforcement of competition leads to a waste of government funds. Thus, the program must use proper analysis to evaluate competition in terms of cost, potential for cost reduction, and risk reduction."⁹ A recent GAO report, however, found that competition would have been feasible in many situations in which sole source selections have been made.¹⁰ The report cited reasons for not competing that included lack of effective planning, inappropriate reliance on sole source justifications, insufficient knowledge of procurement, and a lack of commitment to competition by key personnel. This evidence points to the need for competition advocates and thorough market research for every kind of procurement effort.

Not only should the type of marketplace be identified and analyzed, determination should be made to whether several types of competitive environments exist simultaneously. A prime contractor may be selected as a sole source due to the market environment, but there may exist a very competitive market for

subcontractors. With proper planning and research, the business community may be alerted to the government's impending need and more subcontractors can enter the market. This type of long range thinking and planning is apparently what defense procurement is sorely lacking. The astronomical cost increases for spare parts and bits and pieces of hardware must lead us to the conclusion that if the environment were more competitive, the costs could be controlled.

Another question that can be asked in the pre-planning and market research stage is whether there is a correlation between the type of competitive environment and the type of government need. This need could be a system acquisition, a service need, a support requirement, or a supply issue. The correlation might lead to a business strategy less motivated to overall cost savings and more attuned to other factors, such as overall system performance, contractor's history, industrial base, or reliability and maintainability.

The Air Force has spent millions of dollars in its current effort with General Electric to develop the F110 engine as a competitor for the F100 Pratt and Whitney engine used in the F-15 and F-16. It may have been possible that with proper research and planning the Air Force might have anticipated the problems of having one high performance engine for their two current frontline fighters. A strategy which encouraged the development and procurement of two different engines would have maintained a competitive environment that the Air Force is now trying to correct. This observation is admittedly "Monday morning quarterbacking." But it is also a lesson learned. Both the fighter engine industrial base and the engine's reliability and maintainability should have been major factors in the procurement of such a vital subsystem to two major aircraft programs.

SUMMARY

The direction is clear to the Air Force. Competition must be used more effectively to control weapon system costs. Competition does not need to be limited to design only, winner-take-all thinking that has prevailed over the past years. Production follow-on competition, second sourcing, and subcontracting competition all need to be considered and used where beneficial. A key implication to this direction is thorough preplanning and market research early in the acquisition process to provide the basis for a sound business strategy. A strategy which understands the marketplace, promotes competition, and correlates the type of marketplace with the government's need is one which can better serve the total

acquisition process. Not in all cases will competition serve the government best. Complete planning and market research will always serve to promote effective procurement and a cost conscious business strategy.

REFERENCES

1. General Robert T. Marsh, USAF, "Competition Management," letter dated April 1, 1983.
2. Emanuel Kintisch, "Competition and Joint Venture Procurement," National Defense, September 1982.
3. Deputy Secretary of Defense Frank C. Carlucci, Memorandum, "Increasing Competition in the Acquisition Process," July 27, 1981.
4. Office of Management and Budget Circular A-109, "Major System Acquisition," April 5, 1979.
5. "An Analysis of the Impact of Dual Sourcing of Defense Procurement," The Analytic Sciences Corporation, August 7, 1981.
6. Air Force Policy Letter for Commanders, Office of the Secretary of the Air Force, September 1, 1983.
7. Defense Acquisition Regulation 21-126, Item 18, Extent of Competition in Negotiation.
8. Commander Benjamin R. Sellers, SC, USN, "Second Sourcing: A Way to Enhance Production Competition," Program Manager, May-June 1983.
9. Colonel G. Dana Brabson, USAF, "DOD Acquisition Improvement Program," Concepts, Autumn 1981.
10. Report Number PLRD 82-40, General Accounting Office, April 7, 1982.

